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Committee on the Peaceful Uses of Outer Space
Scientific and Technical Subcommittee
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Draft report

III. Space technology for socioeconomic development in the context of the United Nations Conference on Sustainable Development and the post-2015 development agenda

1. In accordance with General Assembly resolution 69/85, the Subcommittee considered agenda item 5, "Space technology for socioeconomic development in the context of the United Nations Conference on Sustainable Development and the post-2015 development agenda".

2. The representatives of Colombia, Egypt, France, Germany and Japan made statements under agenda item 5. During the general exchange of views, statements relating to the item were made by representatives of other member States.

3. The Subcommittee heard the following scientific and technical presentations:

(a) "Blue Dot: – shaping the future, ISS mission of the German ESA astronaut Alexander Gerst", by the representative of Germany;

(b) "The Italian activities and contributions to ISS", by the representative of Italy;

(c) "Satellite information to contribute to global health", by the representative of Japan;

(d) "The Office for Outer Space Affairs and partners promoting Earth observation to meet global disaster risk reduction and sustainable development commitments", by the Office for Outer Space Affairs.

4. The Subcommittee had before it the following:

(a) Conference room paper entitled "Revised draft proposed workplan for a mechanism of cooperative deliberation for space and sustainable development:

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bridging the Committee on the Peaceful Uses of Outer Space and the Scientific and Technical Subcommittee" (A/AC.105/C.1/2015/CRP.15);

(b) Note by the Secretariat entitled "Rio+20 and beyond: towards the post-2015 development agenda" (A/AC.105/C.1/2015/CRP.26);

(c) Conference room paper entitled "First meeting of the expert group on space and global health held on 5 February 2015: report on the proposed mandate, workplan and initial considerations" (A/AC.105/C.1/2015/CRP.29);

(d) Note by the past, present and incoming chairs of the Committee on the Peaceful Uses of Outer Space entitled "2018 'UNISPACE+50' theme of the Scientific and Technical Subcommittee, the Legal Subcommittee and the Committee on the Peaceful Uses of Outer Space" (A/AC.105/C.1/2015/CRP.30).

5. The Subcommittee recalled that the General Assembly, in its resolution 69/85, reiterated the need to promote the benefits of space technology and its applications in the major United Nations conferences and summits for economic, social and cultural development and related fields, and recognized that the fundamental significance of space science and technology and their applications for global, regional, national and local sustainable development processes should be promoted in the formulation of policies and programmes of action and their implementation, including through efforts towards achieving the objectives of those conferences and summits, including implementing the Millennium Declaration and contributing to the post-2015 development agenda process.

6. The Subcommittee also recalled that, in that resolution, the Assembly encouraged Member States, to that end, to promote the inclusion in those conferences, summits and processes of the relevance of space science and technology applications and the use of space-derived geospatial data.

7. The Subcommittee noted the effective role of space science and technology and their applications and geospatial information in areas such as tele-health and tele-epidemiology, tele-education, disaster management, climate change, environmental protection, urban and rural development and Earth monitoring, as well as their contribution to economic, social and cultural development.

8. The Subcommittee noted with satisfaction that a panel discussion on space and sustainable development within the context of the post-2015 development agenda, organized by the Office for Outer Space Affairs, was held on 15 October 2014 during the plenary deliberations by the General Assembly Fourth Committee on international cooperation in the peaceful uses of outer space.

9. The Subcommittee noted with appreciation that the eleventh open informal session of UN-Space, entitled "Engaging space tools for development on Earth: contribution of space technology and applications to the post-2015 development agenda" was organized by the Office for Outer Space Affairs and held on 14 May 2014 in New York. The Subcommittee noted that a half-day high-level panel would be organized in conjunction with the joint United Nations/Germany Conference, to be held in Bonn from 26 to 28 May 2015; the title of the event would be "UN-Space–Bonn Conference high-level panel on space-based information for development".

10. Some delegations urged UN-Space to continue to examine ways in which space science and technology and their applications could contribute to the implementation of the Millennium Declaration and the post-2015 development agenda.

11. The view was expressed that the sustainable development goals should not be renegotiated with a view to including space technology, given the progress achieved by the Open Working Group of the General Assembly on Sustainable Development Goals. The delegation in question was of the view that space technology could be a fundamental tool for measuring, monitoring and evaluating the implementation of the post-2015 development agenda.

12. The view was expressed that the Subcommittee should continue its work to embed the use of space technology in the United Nations system.

13. The view was expressed that it was important to continue discussions on the use of space technology for socioeconomic development under the post-2015 development agenda, and that effective sharing of space-based data remained one of the important applications that could support achieving national objectives under the post-2015 development agenda.

14. The view was expressed that space activities should be considered an effective driver of economic growth and spin-off innovations for the benefit of humankind, and that progress in the peaceful uses of outer space would promote equitable and balanced development.

15. The view was expressed that the international community, especially developed countries, should step up their contributions towards bridging existing scientific and technological gaps by building capability in and sharing know-how with developing countries, and that without such support the goal of all-inclusive global development might not be achievable.

16. The view was further expressed that it was important to bridge the existing gaps in space technology capabilities and that the transfer of knowledge of space technology remained a key factor for building national capacity of Member States, which in turn could play a significant role in the attempt to make the space environment more sustainable.

17. The Working Group of the Whole was reconvened under the chairmanship of V. K. Dadhwal (India), in accordance with paragraph 8 of General Assembly resolution 69/85. At its [...] meeting, on [...] February, the Subcommittee endorsed the report of the Working Group of the Whole, which is contained in annex I to the present report.

V. Space debris

18. In accordance with General Assembly resolution 69/85, the Subcommittee considered agenda item 7, "Space debris".

19. The representatives of Brazil, Canada, China, Cuba, Egypt, Germany, India, Indonesia, Italy, Japan, Pakistan, the Russian Federation, Saudi Arabia, Switzerland, the United States and Venezuela (Bolivarian Republic of) made statements under agenda item 7. A statement was made under the item by the representative of Chile

on behalf of the Group of Latin American and Caribbean States. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

20. The Subcommittee heard the following scientific and technical presentations:

(a) "United States space debris environment, operations and modelling updates", by the representative of the United States;

(b) "The Inter-Agency Space Debris Coordination Committee (IADC) — an overview of the IADC annual activities", by the representative of the United States;

(c) "Overview of the 2014 space debris activities in France", by the representative of France;

(d) "KIAM[1] space debris data centre for processing and analysing information on space debris obtained by the ISON network", by the representative of the Russian Federation;

(e) "The RemoveDEBRIS mission", by the representative of the United Kingdom;

(f) "Space debris mitigation activities at ESA in 2014", by the observer for ESA.

21. The Subcommittee had before it the following:

(a) Information on national research on space debris, the safety of space objects with nuclear power sources on board and problems relating to the collision of such objects with space debris, containing replies received from Member States and international organizations on the issue (A/AC.105/C.1/109, Add.1, A/AC.105/C.1/2015/CRP.7, A/AC.105/C.1/2015/CRP.8 and A/AC.105/C.1/2015/CRP.16);

(b) Conference room paper entitled "Compendium of space debris mitigation standards adopted by States and international organizations" (A/AC.105/C.1/2015/CRP.9).

22. The Subcommittee expressed concern at the increasing amount of space debris and encouraged those States which had not yet done so to consider voluntary implementation of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space.

23. The Subcommittee agreed that States, in particular spacefaring nations, should pay greater attention to the problem of collisions of space objects, including those with nuclear power sources on board, with space debris and to other aspects of space debris, including its re-entry into the atmosphere.

24. The Subcommittee noted with satisfaction that some States were implementing space debris mitigation measures consistent with the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space and/or the Inter-Agency Space Debris Coordination Committee (IADC) Space Debris Mitigation Guidelines, and that other States had developed their own space debris mitigation standards based on those guidelines.

[1] KIAM = Keldysh Institute of Applied Mathematics.

25. The Subcommittee noted that other States were using the IADC Guidelines and the European Code of Conduct for Space Debris Mitigation as reference points in their regulatory frameworks for national space activities. The Subcommittee also noted that other States had cooperated, in the framework of the ESA space situational awareness programme, to address the issue of space debris.

26. The Subcommittee noted with appreciation that States had adopted a number of approaches and concrete actions to mitigate space debris, including the improvement of the design of launch vehicles and spacecraft, the reorbiting of satellites, passivation, end-of-life operations and the development of specific software and models for space debris mitigation.

27. The Subcommittee noted that research was being conducted in the areas of technology for space debris observation and continuous monitoring, space debris re-entry prediction, collision avoidance and modelling of collision probability, in-orbit robotic servicing of satellites, and technologies to protect space systems from space debris and to limit the creation of additional space debris.

28. Some delegations expressed the view that outcomes of the work of working groups of the Subcommittee, such as the Safety Framework for Nuclear Power Source Applications in Outer Space and the Space Debris Mitigation Guidelines of the Committee, should be officially presented to the Legal Subcommittee for examination.

29. The view was expressed that it was necessary to continue improving the Space Debris Mitigation Guidelines of the Committee and that the Scientific and Technical Subcommittee and the Legal Subcommittee should cooperate with the aim of developing legally binding rules relating to space debris, including debris derived from space platforms with nuclear power sources on board.

30. Some delegations expressed the view that space debris issues could be effectively addressed through the voluntary implementation of space debris mitigation measures by means of national mechanisms.

31. Some delegations expressed the view that countries with highly advanced space programmes should assume their responsibilities in the area of space debris to ensure that the mitigation and removal costs were not passed on to countries with emerging space programmes and that a solution should be sought, in particular for space debris of large dimensions that could potentially generate multiple fragments, which would be costly to remove.

32. Some delegations expressed the view that information on actions to reduce the creation of space debris should be made available to the Committee, in particular by those States which were largely responsible for creating space debris and by the States that had the capacity to take action with regard to space debris mitigation.

33. The view was expressed that reporting the status of implementation of the Space Debris Mitigation Guidelines by all spacefaring nations would improve transparency and confidence-building among Member States.

34. Some delegations expressed the view that developing countries should benefit from technical assistance provided by spacefaring nations for monitoring, mitigation and removal of space debris.

35. Some delegations expressed the view that the exchange of knowledge, data and analysis methods among States was essential for meaningful mitigation strategies and remediation measures.

36. The view was expressed that since space debris had been created by the past operations of spacefaring countries, those countries should assist countries with emerging space programmes in the implementation of space debris mitigation measures through the provision of conjunction assessment risk analysis systems and situational awareness systems for the live monitoring of space objects, providing scientific and technological support, including the transfer of relevant technology, without imposing undue costs.

37. The view was expressed that a mechanism should be developed to assist emerging spacefaring nations that did not have the necessary financial and technological resources to comply with the set of debris mitigation guidelines.

38. Some delegations expressed the view that all relevant information related to the re-entry of space debris into the Earth's atmosphere should be reported diligently and expeditiously to countries that might be affected.

39. Some delegations expressed the view that, during the removal of space debris, no unilateral action should be taken by any State with respect to a space object of another State unless a consultation and agreement with regard to that action had been reached with the State of registry of the space object in question.

40. The view was expressed that an advisory group and initiative, similar to those adopted in the Space Mission Planning Advisory Group and the Action Team on Near-Earth Objects (Action Team 14), should be set up to address the issue of remediation solutions with respect to space debris.

41. The view was expressed that a political, legal and institutional framework to implement measures related to in-orbit remediation of the space environment needed to be developed and accepted.

42. The view was expressed that coordinated efforts were required to deal with technological and financial aspects of debris removal.

43. The view was expressed that research should focus on eliminating tiny pieces of space debris that were difficult to track or identify, and that a legal framework should be developed under the United Nations auspices to support activities for the clean-up of the space environment.

44. The view was expressed that special attention should be paid to mitigation measures, such as the removal of massive non-functional spacecraft and launch vehicle stages.

45. The Subcommittee noted with satisfaction that the compendium of standards adopted by States and international organizations to mitigate space debris, initiated by Canada, the Czech Republic and Germany, was made available on the website of the Office for Outer Space Affairs, and encouraged Member States to provide their contributions or updates to the compendium.

46. The Subcommittee took note of paragraph 12 of General Assembly resolution 69/85, and agreed that Member States and international organizations with permanent observer status with the Committee should continue to be invited to

provide reports on research on space debris, the safety of space objects with nuclear power sources on board, problems relating to the collision of such space objects with space debris and ways in which debris mitigation guidelines were being implemented.